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LUTCHMANS ON THE QUESTION OF VENOUS ABSORPTION.

MENTION is made by Hippocrates and Galen of absorption and inhalation, which they believed were effected in the human body through the agency of the arteries and veins. But when Harvey, in the seventeenth century, had fully illustrated the circulation of the blood, from which it was plain that the blood was conveyed by the arteries from the centre to the periphery of the body, the power of the arterial absorption was deservedly rejected. Not long after the discovery of the circulation of the blood, Casparus Asellius (anno 1622) found vessels filled with a whitish fluid in the mesentery of a dog, and on the surface of the intestines, which he named lacteals and lacteal veins. Already some idea of these had occurred to Herophilus and Erasistratus (300 years before the birth of Christ); and even in the year 1556, Bartholomæus Eustachius saw the thoracic duct in a horse, but mistook it for a vein, and called it the white thoracic vein; therefore, many physiologists have assigned the function of absorption to these vessels, discovered by Asellius in the first instance; after that Olaus Rudbeck (anno 1650) more fully demonstrated the thoracic duct, both its origin and continuation, from the lacteal veins.

When diligent investigation taught that the lacteal vessels, in appearance at least, differed somewhat from the lymphatics, but that this kind of vessels was commonly dispersed throughout the body, physiologists began to doubt the seat of absorption and its apparatus, and moreover, to divide into opposite opinions. For some regarded venous absorption to be proved by the testimony of the ancients; others thought that this action was to be attributed only to the lymphatic vessels.

Glisson, Bilsius, and Swammerdaw, are among those who supported venous absorption, who, having tied the mesenteric veins in a live animal, and after some time having opened them, saw the blood contained in them mixed with white striae, and imagined that this matter was absorbed from the intestines by the veins. But some explain these striae to consist of coagulable lymph; others of chyle not well mixed with the blood, and more or less dispersed through the whole body; while Hewson and Rudolph determine that that chyle was received from the arteries.

It was the opinion of Haller that veins, with the power of absorption, arose with small open mouths from the cavities of the body, and the cellular tissue, &c., as appears from various passages in his *Elements on Physiology*. He also derives jaundice from the bile absorbed through the sanguiferous veins. Others, as Rosen, Waller, Meckel, Lobstein, and Sir Astley Cooper, have observed, that mercury injected into the

lymphatic vessels, passed into the branches of the vena portæ. Tiedemann and Fohmann have found this anastomosis to exist in the glands.

K. Boerhaave (anno 1730) injected water into the stomach and intestines of a dead dog, and after continual pressure for several hours, writes that it entered the mesenteric and gastric veins, and propelled the blood. But many persons, and among others Dr. Van De Sande, contend, in order to render this argument unavailing, that the water penetrated through the organic pores, or through a rupture. J. F. Meckel filled the vesiculæ seminales with waxy matter, having tied the excretory ducts, and observed this matter penetrate the minute branches of the hypogastric vein. So, also, water injected into the bladder of a male subject passed into the same vein. Neither Cruikshank nor Dr. Oudemann succeeded in this experiment; wherefore they suppose the injected matter passed into the veins through ruptured vessels.

Moreover, others have alleged the deficiency of lymphatics in some parts, as in the placenta, which, however, appears doubtful; and that blood effused into the cells of the corpora cavernosa penis is taken up by veins. They also adduce the capacity of the venous system, which far exceeds the arterial, and the small dimensions of the thoracic duct, as if it were not sufficient to receive and propel all the moisture which is contained in the lacteal and lymphatic vessels. But even the slower motion of the venous blood corresponds with the greater capacity of the veins.

Here may be mentioned the arguments derived from tying or wounding the thoracic duct, such as Haller and Flandrin bring forward, the lesion of which animals have survived a long time, seeming to prove that other channels exist besides the thoracic duct, by which chyle passes into the blood. Nevertheless, it is evident that these arguments are equally incapable of proving venous absorption, since a double thoracic duct has often been discovered.

Hence it appears that the arguments produced by many of the ancients to demonstrate venous absorption, have not placed this subject beyond all doubt; neither do the arguments taken from the incubation of eggs prove more,—in which veins are present before arteries and lymphatic vessels: for a conclusion on so imperfect a state is scarcely tenable with respect to the human body.

Flandrin was the first who at length studied to recal the learning of the ancients on venous absorption; being urged by the observation, that the blood of the mesenteric veins in a horse had a peculiar aromatic odor, and analogous in taste to urine, which the blood in the remaining veins in the body did not possess. He injected into another horse half a pound of assafetida, dissolved in honey, and smelt it in the venous blood, but not in the chyloferous vessels. Magendie having succeeded him, instituted the following experiments. He separated in such a manner a part of the small intestine of a dog, which had been previously well fed, that it adhered to the body only by one artery and vein: one extremity of this portion being carefully tied, he injected the poison upas, and prevented its effusion by a ligature. Death followed as soon as if the poison had been introduced into the sound part of the intestine; appearing to him a proof that this poison was absorbed by the small branches of the remaining vein. Since, however, the slender twigs of nerves probably

penetrate the coats of the artery, and follow their course, doubts can be started whether these poisonous effects cannot be explained by an affection of the nerves themselves.

He separated the thigh of a dog from the rest of the body, previously stupified by opium, so that only the crural artery and vein remained, having removed the cellular coat of these vessels, lest lymphatic vessels might accidentally pass through this. He then injected two grains of the same poison into the foot of this side; the symptoms appeared as soon, and as powerfully, as when the poison is applied to a sound foot.

The experiments were repeated with the same result by Lawrence and Coates. It is, indeed, supposed that the poison was placed in contact with the blood itself, and passed into the circulation by a way made in this direction; but Emmert, in experiments performed upon frogs, introduced the poison between the skin and muscles, and the same result ensued. It would, however, be difficult to show clearly that the application was made without injury to the smaller vessels.

Fodera filled a portion of the small intestine of a live animal with a solution of prussiate of potass: having tied the intestine on both sides, he saw, after he had placed the intestine in a solution of sulphate of iron, the lymphatic vessels and mesenteric veins tinged with a bluish color. My most esteemed instructor performed this experiment, after the interval of a year, and could only detect absorption of the prussiate of potass in the lymphatic vessels, but not in the veins. The prussiate of potass contained in the portion of the intestine was not changed in color after half an hour, so that the sulphate of iron had not penetrated the walls of the intestines.

According to Tiedemann and Gmelin, coloring, odoriferous, metallic, and saline matters, are, in the first place, absorbed by the mesenteric veins; the chyle especially, by the lacteal vessels. White striæ were also observed in the blood of the vena porta by these celebrated men, which they explain from the anastomosis of the lacteal vessels with the sanguiferous veins. Lawrence and Coates detected a solution of prussiate of potass both in the chyle and in the blood, although more abundantly in the blood; the contrary was observed by the Society of Philadelphia.

At length, Mayer injected a solution of prussiate of potass into the trachea of a rabbit; he found this sooner in the blood than in the chyle; and in the left ventricle of the heart before the right. The same thing occurred, although the thoracic duct had been tied; which, indeed, seems to prove that this solution was absorbed by veins from the bronchial extremities, but not by lymphatic vessels. The same person observed in a man who died from pulmonary affection, the veins of the small intestines, at least the minuter branches running on the surface of the small intestines, filled with a grey matter, similar to chyle, which was visible to the naked eye even at the margin of the valves of Kerkring. The greater trunks contained blood: the lymphatic vessels were empty; which difference he attributed to the venous system living longer than the lymphatic, or from the right side of the heart dying later than the left.

There is certainly a great difference between the manner in which

functions are performed, during health, in the living body, and that in which they are exercised after vivisections have been instituted, by which, in addition to the other injuries, the nervous system, at least in many, is violently disturbed. Besides, the substances introduced or applied, in order to illustrate this or that physiological question, in the greatest degree differ from the nourishing matter naturally swallowed. Although, therefore, it would be very hazardous to apply rashly to the human body all opinions which depend upon experiments, nevertheless, we think it can be deduced from the experiments by Mayer and Tiedemann, that their opinion is not devoid of all appearance of truth—that the power of absorption exists both in the lymphatic vessels, the mesenteric and pulmonary veins.

Another question is added, which has lately been agitated by physiologists,—whether another passage of the lymphatic vessels into the veins exists, besides the thoracic duct alone; either the insertion of several into the left subclavian vein, or occasionally into the right; whether, therefore, the power of absorption is peculiar to veins,—whether they convey what the lymphatic vessels pour into the veins by anastomosis.

Already anatomists have observed, while injecting the lymphatic glands, the veins sometimes filled with quicksilver. It happened to J. F. Meckel, who saw mercury had penetrated the vena cava, after he had injected a lumbar gland, which Hewson, Cruikshank, Mascagni, &c., attributed to ruptured vessels. Falconar and J. F. Meckel, jun., have observed the same thing. G. Vrolok relates that he perceived such a communication in the phoca vitulina. Beclard affirms he often saw the passage of mercury both into the lymphatic vessels and the veins of glands, which, however, he did not attribute to the rupture of vessels. V. Fohmann, who scientifically investigated this branch of minute anatomy, found the same in man; moreover, in horses, cows, cats, &c. From many of the glands in dogs the mercury passed only into veins. The lymphatic vessels of the small intestine in the phoca marina, appear to terminate only in the mesenteric veins; the same obtained in the bronchial gland.

He also observed in fish, as in the *torpedo marmorata*, and the *esox lucius*, an abundant anastomosis between the lymphatic vessels and veins in the neighborhood of the heart, and on the surface of the organs subservient to digestion.

Many observations worthy to be read, on this subject, which have produced a similar result, may be found in Lauth. Even the greater trunks of the lymphatic vessels, according to Lippi, are inserted in man into the renal vein, cava, and vena portæ. Outside the glands he has even represented, in plates, a horse and goose, having this complicated anastomosis; but Fohmann has proved this author to have mistaken sanguiferous vessels proceeding from glands, for lymphatic.

Hence, indeed, it seems to be proved that a communication exists between the lymphatic vessels and veins. Granting this to be true, many arguments alleged in favor of venous absorption would be invalidated; for then, to adduce an example, the chyle, already in the lymphatic glands, might be mixed with the blood in greater or less quantity, by the assistance of the veins.

It remains for us to notice, that even in our time physiologists might be cited who strenuously deny both absorption of veins, and their anastomosis with lymphatic vessels, among whom Th. Soemmering and Rudolphi are particularly to be mentioned; for their injections do not show any passage of mercury from lymphatics into veins, neither in the dog, dolphin, birds, amphibious animals, nor even in fish; but if mercury should have passed into the veins, they suppose it attributable to ruptured vessels. The lymphatics of the small intestine in the *phoca marina* extend to a congeries of glands, which is commonly called *pancreas Asellii*, the lymphatic vessels proceeding from which converge into a duct of marked diameter, to be inserted into the thoracic duct itself;—an observation opposed to Fohmann. Rudolphi especially made the following objections to venous absorption:—1. The difference of structure between the lymphatics and veins. 2. Fluids injected into the cavities of dead animals are taken up by the lymphatics, but not by veins;—which argument does not affect the experiments instituted in living animals by Tiedemann and Meyer. 3. All odoriferous matters penetrate organs, but are not found in lymphatic vessels, because their nature is changed in the glands. Tiedemann found not only odoriferous, but also coloring matters, in the blood of the portal veins. 4. He deduces that some substances are found in the blood, but not in the chyle, both from peculiar causes moderating the absorption of these within the vessels, and from the chemical analysis of an organic substance not as yet sufficiently perfect. But if chemical analysis could detect these substances in the blood, I do not see why they could not be discovered in chyle, which is as yet imperfect blood, and more simple. 5. According to his opinion, matter analogous to chyle existing in the blood, was not absorbed at first by the mesenteric veins, but was changed into genuine blood during sanguification.

My valued instructor performed the following experiment before many pupils, in order to establish whether the passage of quicksilver from the lymphatic vessels and glands into the veins, was to be ascribed to ruptured vessels:—He carefully sought for the lymphatic vessels of the left fore paw in a well-fed dog, which had been quickly killed by prussic acid, and injected with mercury a little vessel near the carpus; and pursuing the course of the lymphatic vessels to the axilla, there we saw a net-work of lymphatic vessels, conspicuous on account of the complicated anastomosis, with distinctly turgid valves, filled with mercury. All these lymphatic vessels entered the axillary glands. One larger gland, situated near the insertion of the cephalic vein into the axillary vein, was entirely filled with the quicksilver, without any rupture of the vessels or effusion of quicksilver, which could not be so easily detected in the other glands or lymphatic vessels. We were unable to discover, by the most accurate examination, any other lymphatic vessels going out from the other side of the glands; but a vein filled with mercury went out, terminating in the subcutaneous vein of the neck, which, like the jugular vein, contained mercury. A lymphatic vessel going out from another smaller gland, partially filled with mercury, appeared to extend to a greater gland. He injected a little mercury into a lymphatic vessel of the other foot, and separated it from the body, with the glands and veins which

proceeded from the other side of the gland, and terminated in greater veins. We could not detect any lymphatic vessel going out. The parts being arranged on a table, he introduced a tube into a lymphatic vessel, towards the gland, when, after moderate pressure, we saw by the aid of the column of mercury, all the lymphatic vessels of the gland in nodules—not only filled, but the mercury soon began to flow from the veins. Upon increasing the pressure, this vein was turgid with mercury, when a ligature was passed round it. We could not detect in this experiment any rupture of vessels, after the most accurate examination. At length, having opened the thoracic cavity, we saw the thoracic duct turgid with transparent chyle, without a globule of mercury; which proves that mercury, in the former experiment, did not pass from the thoracic duct into the veins.

Should any one wish to establish that the mercury passed from the lymphatic vessels of the gland by ruptured vessels, after such slight pressure, it would be necessary, after the increased pressure, that the mercury should be effused from this rupture not only into the vein, but also into the cellular tissue surrounding the gland, so as to be extravasated; which was by no means the case.

Afterwards, an opportunity offering itself through the kindness of the veterinary professor, Numan, my instructor endeavored to repeat these experiments in a colt. He filled with mercury the lymphatic vessels in the groin, at the os humeri, and in the mesentery; but after the mercury had entered the glands, an effusion of mercury always occurred from ruptured vessels. After employing less pressure, the glands, indeed, were filled with mercury; but the mercury neither passed from sound, nor from injured and ruptured glands, into other vessels, so that neither the lymphatic vessel going out, nor the adjacent vein, was filled. Perhaps the parts were more or less putrifying, from the increased temperature of the atmosphere, although no putrid odor was evident in the body. If the passage of the mercury from the glands into the veins was the result of rupture of the vessels, I do not see why we nowhere observed mercury passing from these glands into veins, but into the cellular tissue between the lymphatic vessels of the gland, which was expanded into large vesicles.—*Lon. Med. Gaz.*

THE FŒTAL GENITAL ORGANS CONSIDERED IN REFERENCE TO HERMAPHRODISM.

BY A. F. MOIR, OF ARUNDEL, ENGLAND.

LOOKING over a few fœtal preparations, varying from the second to the sixth month, my attention was casually directed to the conformation of their genital organs. The appearances (by a cursory examination) were at first believed to be the result of malformation. On a more minute and comparative view, we were, however, satisfied that it must be considered as the normal development of these organs in the earlier stage of organization. The subject, as far as I am aware, has not hitherto been investigated; I would therefore caution your readers neither roundly to con-

demon, or implicitly believe, the following statements, until they have examined the subject for themselves, which can be easily and satisfactorily accomplished by any one having access to a series of such preparations.

In a foetus between the second and third month, examined by a microscope of a medium power, the rudimentary penis could be distinctly observed inclined downwards; when elevated, its lower surface was seen cleft in the course of the urethra, with a similar cleft or fissure, bordered by a slight projecting fold of integument, extending from its base, and in the mesial line, to near the margin of the anus.

In two or three others more advanced, a similar conformation of parts could be distinctly seen with the naked eye. The cleft in the urethral surface of the penis was continued in the direction of the bladder, further than we could detect even by the aid of our microscope; but as yet, not having dissected the parts, we are unprepared to state whether or not it may be continued as far as the orifice of the bladder. The *scrotal* cleft, or, from the now increased development, more properly *fossa*, was of a triangular shape, its base being towards the penis, and the marginal projecting folds of integument meeting, and slightly united at its apex, which (excepting the penis) might have readily been mistaken for the embryo organs of the female. In one foetus in particular, between the third, or about the fourth month, as nearly as could be ascertained, the parts were so distinctly seen, that had it been in the absence of further, or comparative illustration, we should have had no hesitation in considering it as the usual anormal condition, tending to, and explanatory of, the nature of the anomalies occasionally occurring in these parts. The penis was considerably developed, covered superiorly by a continuance of the common integument of the abdomen, and inclined downwards; when elevated, a similar condition of the parts, as already described, in a progressive state of development, was distinctly observed. This preparation is valuable, inasmuch as it must invalidate any objection that might be urged against us, in confounding the penis and clitoris; a mistake which can be easily avoided by considering the locality of the two, and that in reference to the parts in their immediate vicinity.

From the above sketch of the organization and development of the fetal genital organs, studiously endeavored to be faithfully described, and as concisely as consistent with perspicuity, we deduce the following inferences:—That prior to, or between the fourth or fifth month, (for we cannot be precise as to the exact period), the penis consists of the corpus cavernosum, covered superiorly by the common integument of the abdomen; and inferiorly, a cleft or fissure (terms vague, but sufficiently expressive), is observed in the course, afterwards to be occupied by the urethra (the formation of which, with other peculiarities, we have not yet examined); that a similar cleft extends from the base of the penis, in the mesial line, to near the margin of the anus, bordered by projecting folds of integument, which gradually increase, and by their union form the scrotum; that, by the retarded organization of either of these structures, we can readily account for the various species of genital malformation, known by the general name of *hermaphrodisism*, and other *irregularities* occasionally met with in these organs. For the present, however,

we forbear to generalize further, well knowing that the importance of the subject precludes all speculation ; and that it is only by a patient and minute examination of a series of foetal preparations that the *truth* can be elicited.

Indeed, the chief object we have in view in soliciting the insertion of the above remarks in your excellent journal, is the desire that others, whose opportunities are more extended than our own, may co-operate with us in an investigation at once so interesting and curious ; otherwise common prudence should render us cautious in communicating observations so crude and meagrely *jumbled together*.—*Ibid*.

EFFECTS OF MOUNTAIN ELEVATIONS UPON THE HUMAN BODY.

BY P. CUNNINGHAM, SURGEON, R.N.

THE singular contrast of high mountains in the northern hemisphere producing reverse effects upon the travellers ascending them, to those in the southern hemisphere, never having been, to my knowledge, animadverted on, a short parallel between the two may not be unacceptable. At high elevations in the northern hemisphere (such as the top of Mont Blanc), there is a strong determination of blood to the head, indicated by swelling and lividity of the face and lips, sleepiness, and bleedings from the mouth, nose, eyes, and ears ; while at similar elevations in the southern hemisphere there is a strong determination of blood in a contrary direction, indicated by paleness and shrinking of the features, sleeplessness, giddiness, faintness, and vomiting ;—apoplectic symptoms thus characterizing the first ; and all the usual accompaniments of fainting, the second. The treatment affording relief in each is also equally opposite (with the exception of the horizontal posture, which is useful in both) ; the stimulant drinks, and the stimulant applications to the external parts, such as the mouth, nose, and ears, so beneficial in the southern affection, being hurtful in the northern one. The apoplectic symptoms experienced upon Mont Blanc and other high northern mountains, have been hitherto ascribed to the great rarefaction of the air, whereby the soft parts of the human body are permitted to be expanded by the reduction of the atmospheric pressure upon them ; but as no such effects, but, on the contrary, effects of an opposite nature, are produced by similar elevations in the Andes of Southern America, we must consequently look to some other cause than atmospheric rarefaction to account for them.*

In South America there are two distinct species of affections noted as liable to attack those unaccustomed to high ascents : the first being the usual difficulty of breathing arising from atmospheric rarefaction (common to all high elevations throughout the world) ; and the second, the more alarming one, previously spoken of, which proved so fatal to Bolivar's army at the crossing of the Andes, as recorded in the interesting "*Memoirs of General Miller*." The first is known in Peru by the name of *punya*, and the second by that of *soroche*, in consequence of a belief that

* It is said, however, that when Humboldt ascended Chimborazo, to the height of 10,798 feet, blood issued from his eyes, lips, and gums.—ED. GAR.

a *sirocco*, or foul wind, is the cause of it. According, however, to the opinion of Mr. B. Scott, the intelligent English engineer superintending the great aqueduct at Tacna (Peru), electricity is its exciting cause—an opinion which he has arrived at in consequence of observing particular parts of the Cordillera to be more subject to it than others (and these not always the highest), at which parts the electrometer was always greatly deflected.

The above reverse effects in the respective hemispheres may, I conceive, be readily accounted for by the curious fact of the electric polarities of bodies being the *reverse* in the southern hemisphere to what they are in the northern; a fact for the observation of which, I believe, we are indebted to Lieut. Peter Lecount, R.N., when employed at the Island of Ascension, during the period of Bonaparte's detention at St. Helena. Thus, electricity being found to occupy the upper portion of bodies in the northern hemisphere, and the lower portion in the southern, will consequently tend to propel the blood towards the head in the first, and towards the feet in the second; thereby giving rise to an apoplectic tendency in the one, and to a tendency to fainting in the other, the symptoms in both being necessarily mitigated by the horizontal posture, whereby the electricity is more equally distributed throughout the body, in consequence of its occupying the latter longitudinally instead of transversely. I am further disposed to this opinion, from finding that travellers in the Andes seldom experience any unpleasant feeling as long as they remain on horseback, where they are in a great measure insulated from the electric influence of the earth, by the non-conducting sheepskin paddings placed under the saddles in Peru.

In July, 1833, I accompanied Captain Hope, of H. M. S. Tyne, Mr. Young, a merchant of Tacna, and Mr. Scott, engineer, on an interesting excursion to the aqueduct excavating on the plain of Chinchillar, nearly 14,000 feet above the level of the sea, and no unpleasant symptoms were experienced by any of us until we had crossed the highest ridge of the Cordillera, and alighted to walk, when all, except Mr. Scott, were instantly attacked with the *soroche*. The moment that my feet touched the ground, I was seized with giddiness, dimness of sight, and nausea, followed by such an universal tremor and debility that I could barely support myself until I remounted my mule, when, by lowering of my head, and the use of a smelling-bottle, I was enabled to continue my journey to our dining place, two miles farther on. Animals are as subject to it as man, the first symptoms with the mules being a violent trembling, hurried breathing, and disposition to stand still, which, if not permitted, they tumble down, seldom to rise again. The moment the rider perceives the warning, he slackens the reins, to enable the animal to hang down its head until it recovers; of the beneficial effects of which a mule is so well aware, that when the complaint came upon mine in ascending a declivity, it invariably turned round, with the head down hill, in order to make it more dependent.

The treatment found most useful in fainting, is found also the most useful in *soroche*—viz. the horizontal posture, brandy and water, cold water dashed upon the face, and smelling-salts to the nose: rubbing of the nose, mouth, and ears, with garlic, being capable of averting its at-

tacks in both man and beast. The Peruvians compare the *soroche* to sea-sickness, to which it has certainly a very close resemblance, as well as to the state of body resulting from the sudden abstraction of a large quantity of blood; the faintness, sinking of pulse, prostration of strength, irritability of stomach, pallor of feature, and cold perspirations, being similar in all. How opposite to the above are the symptoms consequent on the ascent of Mont Blanc, and other northern mountains—a difference so marked, as to point to some distinct cause existing in each hemisphere, through which such diametrically opposite effects are produced—a cause which, I doubt not, gives rise also to those distinctive features characterizing so strongly the animals of the southern hemisphere from those of the northern.—*Ibid.*

TUMORS OVER THE BODY.

JOHN BAINES, ætat. 25, was admitted into the St. George's Hospital, London, on the twenty-second of January, 1834, under the care of Mr. Brodie, with numerous tumors dispersed over the body. They were of different degrees of hardness and were situated under the skin, and varied in size from a common nut to a walnut. There was one on either arm, just below the olecranon, and two on the edge of the left ulna: these are moveable and feel the impression of the finger. There is one on each leg, about the centre of the tibia, which is fixed. He has had one over each trochanter, and smaller ones over the different parts of the thigh, and about the right wrist joint: these have disappeared within the last twelve months. The general state of his health is good; he has taken no internal medicine, nor made use of any external application to remove these tumors.

Mr. Brodie reflected for some few minutes on this history of the case which the man had given him, and remarked that, if his memory served him accurately, he had met with one or two instances before of a similar disease to this, which had been much benefited by the internal use of the liquor potassæ, and he would therefore give it a trial in this instance, by ordering the patient to take ʒi. of the liquor potassæ in small beer only.

Feb. 5.—The tumors are about the same size, but rather softer in texture. Health generally continues good, with the exception of his bowels, which are, as the patient remarks, "bound up" by the liquor potassæ. The following pills were ordered him, which Mr. Brodie remarked were very useful in cases wherein the liquor potassæ was being exhibited.

R. Pilul. Hydrarg. ʒi.
 Extract. Colocynth Comp. ʒss.
 Extract. Hyoscyami, ʒss. Misce fiat massam in pil. xii, divid.
 quarum sumat ij. pro re nata.

7th.—He complains of severe shooting pains in the head, with giddiness and confusion of ideas, a sense of a heavy weight over the frontal

region, and a feeling of nausea ; the pulse quick and full ; the tongue dry and the skin hot.

R. Hydrarg. Submuriat, gr. iij.

Pulveris Rhei, ʒi. Misce fiat pulvis statim sumendus.

Haust. Salinæ cum vino Antim. Tart. m. xx in sing. haust. sextis horis sumend. Omitt. Liquor Potassæ.

11th.—High degree of fever ; eyes bright and glittering ; face flushed and red ; he complains of great pain and huskiness about the throat, fauces, and tonsillar region ; pulse 100, full and compressible ; tongue dry and furred ; bowels opened by the medicine.

Perstet in usu haust. ut antea præscript.

Et sumat æger Hydrarg. Submar.

Pulveris Antimon. ʒā gr. v. hac nocte hora somni.

A mustard cataplasm to be applied to the throat.

13th.—Throat free from pain, the sense of weight and fulness in it is gone off since the mustard cataplasm was applied ; fauces and tonsils still deeply red : skin hot ; pulse quick and full ; tongue cleaner.

R. Sodæ Boracis, ʒiij. *

Mellis, ʒj.

Aq. Menth Virid, ʒvij. Misce fiat Gargarisma sæpe in die utend.

17th.—Throat much relieved by the gargle ; but there is still a high degree of constitutional fever, with hot dry skin ; complains of a slight pain over the forehead and want of sleep ; pulse quick ; tongue furred ; bowels open.

R. Ammonia Carbonatis, gr. iv.

Liquor. Ammon. Acet. ʒss.

Aq. distillatæ, ʒj. Misce fiat haustus sextis horis sumend.

20th.—Symptoms much the same ; tongue dry and brown ; pulse full ; bowels confined. He was ordered a cathartic pill. At the next visit he was made an out-patient.—*Monthly Archives of the Med. Sci.*

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EFFECTS OF MOUNTAIN ELEVATIONS UPON THE HUMAN BODY.

It appears by an interesting paper which we this day copy, that Mr. Cunningham, of the Royal Navy, endeavors to establish the principle, abundantly curious if true, that the effects produced on the system by ascending high mountains are exactly opposite, according as the trial is made in the northern or southern hemisphere ; that produced in the northern, as at the top of Mont Blanc, being strong determination to the head, indicated by swelling and lividity of the face and lips, sleepiness and bleedings from the mouth, nose, eyes and ears ; while at similar elevations in the southern hemisphere there is a strong determination of blood in a

contrary direction, indicated by paleness and shrinking of the features, sleeplessness, giddiness, faintness, and vomiting :—apoplectic symptoms thus characterizing the first, and all the usual accompaniments of fainting the second. He remarks that “the apoplectic symptoms experienced on Mont Blanc and other high northern mountains, have been hitherto ascribed to the great rarefaction of the air, whereby the soft parts of the human body are permitted to be expanded by the reduction of the atmospheric pressure upon them ; but as no such effects, but on the contrary those of an opposite nature, are produced by similar elevations in the Andes of South America, we must look to some other cause than atmospheric rarefaction to account for them.”

This other cause, which operates so differently on the two sides of the equator, he conceives to be the atmospheric electricity. He supposes that the electric polarities of bodies in the northern hemisphere are the reverse of those in the southern. “Thus electricity being found to occupy the upper portion of bodies in the northern hemisphere, and the lower portion in the southern, will consequently tend to propel the blood towards the head in the first, and towards the feet in the second ; thereby giving rise to an apoplectic tendency in the one, and a tendency to fainting in the other, the symptoms in both being necessarily mitigated by the horizontal posture, whereby the electricity is more equably distributed throughout the body, in consequence of its occupying the latter longitudinally instead of transversely.”

Unhappily for the fate of this ingenious theory, we believe Mr. Cunningham mistakes some material facts in regard to the symptoms actually produced by the cause in question. If we may believe the account given by Saussure, who ascended Mont Blanc and several other peaks of the Alps for the purpose of scientific observation, the symptoms occasioned are by no means those of apoplexy, and do not indicate any extraordinary determination to the head. This author does indeed say that hemorrhage took place from the nose, and he attributes this to the diminished pressure of the atmosphere, allowing the blood to pass more freely into the minute and capillary vessels. The reason why, on this supposition, the blood breaks out rather from the nose and lips than elsewhere, Saussure does not assign, probably because he apprehended that the sagacity of his readers would enable them to recollect that the mucous texture was more permeable than the cutaneous, and that hemorrhage occurring from any cause was more likely to show itself in the former than in the latter. That the symptom is not peculiar to elevations in the northern hemisphere may be learned from Saussure himself, who quotes the expedition of Bouguer among the Andes, to show that it likewise occurred there. It is also stated by Humboldt, that in ascending Chimborazo, at the height of 19,798 feet, the blood issued from his eyes, lips, and gums. The swelling and lividity of the face which accompany this hemorrhage seem to be supplied from some other authority ; if, indeed, they are not suggested by the author's peculiar theory. They certainly are not mentioned by Saussure, though it would be surprising if in a temperature of -2° Reaumur, or 27° Fahrenheit, the face, or at least its nasal portion, should not have exhibited a livid aspect. So much for the peculiar effect of mountainous elevations in northern latitudes. As respects those which Mr. Cunningham considers peculiar to elevations situated like the Cordilleras, he has been in regard to most of them anticipated by the Genevan philosopher. Saussure speaks of faintness and vomiting from his own

experience and observation ; and that paleness and shrinking of the features should accompany these is not surprising, or even that they should be felt to a greater degree after dismounting than while muscular exertion was limited to keeping the seat on a mule's back.

But supposing the facts to be correctly stated, are there not serious objections to the electric theory by which it is attempted to explain them? What is the meaning of the electric polarities of bodies being reversed in the southern hemisphere? Does the compass needle change its poles in crossing the line? We are not aware that such is the fact. But if it were so, what has it to do with the disturbance of the balance of circulation in the human body? Just as much, we should imagine, as the circumstance of water being drawn from a river, by carrying the pitcher up stream or down stream, would affect its operation as an emetic or cathartic. There seems to be a singular confusion of ideas in thus making the human body the subject of magnetic influence, and then supposing this influence to regulate the distribution of the circulating fluid. Admitting even this hypothesis, however, what has the derivation of the blood from the head to the lower extremities to do with the peculiar symptoms of faintness and nausea? And what pretext for the monstrous supposition that the distribution of the electric fluid in the same body varies with the change of position in the body itself? The absurd consequence of this supposition would be, that while the man upright would have his head and feet in opposite electric states, the same man lying on his side would have the same opposition existing between his two arms, his two legs, &c.; while by mounting his mule again, he would appropriate one kind of electricity to his own trunk, and have the other kind possessed in common by his dependent legs and the body of the animal included between them.

In conclusion, we cannot but express our conviction that notwithstanding the ingenious arguments by which the above theory is sustained, it is not calculated to withstand the test of sober criticism. The facts which Mr. Cunningham observed during his expedition are indeed interesting, and valuable contributions to pathology; but to ground on these a new theory of atmospheric influence, in opposition to that which has been deduced from careful observation by men like Humboldt and Saussure, is at least premature. To obtain general principles from a careful and thorough examination of facts, is the part of a philosopher; but hasty generalization serves no useful purpose, and tends to throw a doubt over the facts themselves, which we suspect the observer to have seen under the misguided influence of preconceived hypothesis.

CUPPING AND CALOMEL IN INFANTILE BRONCHITIS.

Dr. BURNES has found this very common disease among children, to yield very readily to the abstraction of from a drachm to an ounce of blood by cupping, in conjunction with the usual remedies employed in affections of this kind. The remark seems to amount to this—that cupping is more effectual in these cases than leeching. There can be no doubt of its being more effectual, as it exerts a double action, counteracting the tendencies of the malady; and if the operation is carefully and judiciously performed, it must be highly preferable to the usual mode of abstracting blood in these cases. Care should be taken that the lancets are not set too deep—an error that prevails very generally in all cases of cupping, and which prevents, more perhaps than anything else, the failure of the majority of physicians who attempt the practice.

THE PULSE.

NOTE on the Frequency of the Pulse in relation to Age ; communicated by M. Leuret.—I have just received from M. Hamont, founder of the School of Veterinary Medicine at Abouzabel, a letter, from which the following passage is extracted, referring to the frequency of the human pulse. I was much surprised, says M. Hamont, to read in a work, published by you and M. Mitivié, that the frequency of the pulse increases with the age of the individual ; this assertion seeming contradictory to all our established ideas, although supported by a great number of facts. I thought it necessary to repeat some experiments myself before I could give my assent to it. For this purpose, I assembled the pupils and servants of the veterinary school, and examined the state of the pulse in each, before the professors of the school of medicine. It was eleven o'clock of the forenoon, and the thermometer of Reaumur stood at 17°. We obtained from this examination the following results :—

10 years of age	60 pulsations.
10 1-2	76 "
12	63 "
12	79 "
12	86 "
20	68 "
22	72 "

Total 504

Average of pulse up to 22 years is 72.

26	85 pulsations.
30	82 "
35	73 "
35	100 "
42	100 "
55	85 "
50	95 "

Total 630

Average of pulse from 26 to 50 years is 90.

All the individuals whose pulse was examined were in a state of perfect health.—*French Gazette.*

Re-vaccination.—M. Moreau lately called the attention the Academie de Médecine to the fact of his having then under his care a lady, who had been vaccinated early in life, but who took the precaution of having the process again recently performed, lest she should catch the smallpox from her husband. Though there was ample evidence of the original vaccination having been complete, the new process was not the less successful : the vesicles were perfect—*superbes*. Other cases were mentioned by different members present ; and M. Bousquet took the opportunity of stating the following remarkable fact :—The son of Professor Adelon, a lad of sixteen, had been vaccinated when an infant ; he received the pox again only eight days before M. Bousquet made these remarks ; and that gentleman added, that he obtained as many vesicles as there were punctures made ; he had even communicated the virus of those vesicles to four children, in all of whom it succeeded perfectly.

London Medical Gazette.

RECORD OF METEOROLOGICAL OBSERVATIONS FOR JUNE, 1834.

1834. June.	THERMOMETER.			BAROMETER.			Wind.	Appearance of the Atmosphere.	Rain in inches.	Moon's Phase.	Remarks.
	Min. therm.	Max. therm.	Mean.	Min. barom.	Max. barom.	Mean.					
Sun. 1.	55.00	71.00	63.00	29.98	29.90	29.860	S W	Cirro-cumulo-stratus.	.35		
Mon. 2.	54.00	74.00	62.00	29.90	29.50	29.400	N W	Cumulus.	.07		Rain, s, and at night—S E, a.
Tues. 3.	48.00	62.50	55.25	29.50	29.65	29.575	N W	Cumuli.			Stratus and S W, m. Tb. 50, s, and a gale.
Wed. 4.	49.50	75.00	62.25	29.70	29.75	29.725	S W	Cumuli.			N E, a.
Thurs. 5.	53.00	50.00	51.50	29.65	29.50	29.575	N E	Cirro-cumulo-stratus.			Severe gale with rain.
Frid. 6.	53.00	60.00	56.50	29.65	29.84	29.745	N E	Cirro-cumulus.	1.10		Rain last night and this morning.
Sat. 7.	55.00	65.00	60.00	29.84	29.84	29.840	E	Cirro-cumulus.		○ m.	
Sun. 8.	54.50	71.00	62.75	29.80	29.86	29.830	S E	Cirrus.			
Mon. 9.	62.00	86.00	74.00	29.76	29.84	29.800	S E	Cirrus.			S W, a.
Tues. 10.	65.00	73.00	69.00	29.80	29.88	29.840	S E	Cirro-stratus.			S W, a.
Wed. 11.	64.00	77.50	70.75	29.56	29.78	29.640	S W	Cirro-cumuli.	.08		Rain, m.
Thurs. 12.	55.00	68.00	61.50	29.66	29.85	29.755	N W	Cumuli.	.03		Rain, a.
Frid. 13.	55.50	69.00	61.75	29.80	29.90	29.850	N W	Cirro-cumulo-stratus.		☾ m.	
Sat. 14.	53.50	65.00	59.25	29.80	30.00	29.900	S W	Cumuli.			
Mon. 15.	48.00	74.00	61.00	30.02	30.10	30.060	S E	Cirro-cumulo-stratus.	.33		Rain, m.
Tues. 16.	56.00	57.25	57.25	30.02	30.05	30.035	N E	Cirro-cumulo-stratus.	.03		Rain, m.
Wed. 17.	53.50	63.50	58.00	29.55	29.65	29.750	N E	Cumuli.	.56		Rain, a.
Thurs. 18.	53.50	55.00	54.00	29.55	29.55	29.550	E	Cumuli.	.02		Rain, a.
Frid. 19.	52.50	71.00	61.50	29.52	29.60	29.560	S W	Cumuli.		● m.	A splendid lunar eclipse. Cirrus, m.
Sat. 20.	57.00	76.00	66.50	29.60	29.72	29.660	E	Cumuli.			
Mon. 21.	53.00	71.00	64.50	29.75	29.80	29.775	S W	Cumulus.			
Tues. 22.	55.00	79.00	67.00	29.80	29.85	29.825	S W	Cumuli.			
Wed. 23.	63.00	82.00	72.50	29.82	29.92	29.870	S W	Cumuli.			S E, a.
Thurs. 24.	63.50	82.00	72.75	29.80	29.92	29.860	S W	Cirro-cumulo-stratus.			Cirrus, a.
Frid. 25.	65.00	79.00	72.00	29.80	29.90	29.850	S W	Cirrus.	.05		Nimbus, a.
Sat. 26.	68.50	85.00	76.50	29.82	29.90	29.860	N W	Cirro-stratus.		☾ a.	
Sun. 27.	71.50	85.00	78.25	30.10	30.12	30.110	S W	Cirro-cumulo-stratus.	.10		Rain.
Mon. 28.	76.00	85.50	80.75	30.10	30.12	30.110	N E	Cirro-cumulo-stratus.			Cumuli, a. E, a.
Tues. 29.	56.00	57.00	56.50	29.80	29.95	29.875	N E	Cirro-cumulo-stratus.			
Wed. 30.	53.50	60.00	56.75	29.80	29.85	29.825	S W	Cirro-cumulo-stratus.			

A. Average. 56.166 70.450 63.233 29.757 29.884 29.856 8 W 2.50
 Bar. — Mean temperature, 63.233. Maximum on the 3d, wind N W, 48.00. Greatest daily variation on the 18th, wind S W, 36.00.
 Least daily variation 25th, wind N E, 1.00. Range of ther. for the month, 36.00. Increase of mean temperature from May, 11.914. — Mean atmospheric pressure, 29.856. Maximum 26th, wind S W, 30.12. Minimum 3rd, wind N W, 29.30. Greatest daily variation 18th, wind N E, 0.45. Least daily variation 7th, wind E, 0.00. Range of barometer, 0.80. Decrease from last month, 0.0069. — Prevailing atmosphere, cirro-cumulo-stratus (cloudy). Prevailing wind, S W. Rain, in inches, 2.80.

Part Independent, Boston Observer, Mass. July 1, 1834.

J. A. BREKTON.

Influenza in Paris.—For the last ten or twelve days an epidemical complaint has attacked most of the patients in Salpêtrière. From the striking resemblance it bears to the influenza which preceded the cholera in 1832, its intensity, the number of persons attacked, and its extension to some individuals in the town and in the department of Seine et Oise, (Arpajou, Montlheri, &c.), it merits the attention of practitioners.

It commenced in Salpêtrière among some of the incurable patients in St. Leon Ward, the least healthy division of the establishment. Since that time it has extended through most of the wards, and has, in many cases, terminated fatally. It commences, in general, by pain in the throat, shivering, and cephalalgia; in slight cases the symptoms subside at the end of three or four days, but sometimes far different is the result; the disease becoming rapidly aggravated, attacking the head, chest, or abdomen, and frequently terminating fatally in twenty-four hours.

The principal appearances observed on making post-mortem examinations in this disease, have exhibited inflammation of the larynx and trachea, more or less acute, and extending, in some instances, down to the divisions of the bronchial tubes, engorgement of the lungs, red or grey hepatization, &c. In other cases, in which there have been vomiting and constipation, but no pain in the epigastric region, there was redness of the stomach and intestines, either in patches or along the whole extent of the intestinal tube. In a third class of cases, where the symptoms seemed principally referable to the head, and which were most quickly fatal, injection of the brain was found. The symptoms of affection of these different organs have been in many patients combined; and when such has been the case, the disease has invariably terminated fatally.

Monthly Archives of the Medical Sciences.

Whole number of deaths in Boston for the week ending July 5, 13. Males, 11—Females, 2.

Of convulsions, 1—accidental, 1—consumption, 1—dysentery, 1—disease of the heart, 2—dropsy, 1—dropsy on the brain, 1—lung fever, 1—marasmus, 1—scarlet fever, 1—teething, 2.

ADVERTISEMENTS.

Ten Subscribers continue to give instruction in the various branches of a Medical Education, to such students as may place themselves under their direction.

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Board, in respectable families in the city, may be had at three dollars a week.

JOHN C. WARREN,
GEORGE HAYWARD,
ENOCH HALE, JR.

Boston, May, 1834.

May 7. cop6t.

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Surgical Instruments made and repaired as above. Orders forwarded will meet with punctual attention.

Feb 19

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